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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,251	11/25/2003	Eiko Nakazawa	N9460.0020/P020	4093

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EXAMINER	
QUASH, ANTHONY G	

ART UNIT	PAPER NUMBER
2881	

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/720,251	NAKAZAWA ET AL.	
	Examiner	Art Unit	
	Anthony Quash	2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-10 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-10 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 25 November 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 11/25/03.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claim 4 recites the limitation "the fulcrum" in line 2 of claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3,5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mann [5,706,416] in view of Van der Mast [4,618,766]. As per claim 1, Mann [5,706,416] teaches a sample observation method comprising the step of recognizing the image of an object in the image of a sample by comparing it with a previously stored reference image, the observation method characterized by further comprising the steps of specifying an object in the image wherein multiple pairs of images of multiple objects having a different tilt angle with respect to the optical axis being stored as the reference images for the objects, computing the correlation between the specified object image and reference image, and displaying the result of computation. See Mann [5,706,416]

abstract, figs. 1-2, col. 1 lines 5-15, 50-60, col. 2 lines 5-10, 20-32, columns 3-4, col. 7 lines 1-20, col. 8 lines 5-20, 44-50, col. 10 lines 10-20, and columns 13-14. However, Mann [5,706,416] does not explicitly state the sample observation being used with a transmission electron beam. Van der Mast [4,618,766] teaches a sample observation method for the transmission electron beam wherein the transmission electron beam images objects having a different tilt angle with respect to the optical axis. See Van der Mast [4,618,766] abstract, fig. 1, col. 1 lines 5-10, 18-23, 50 – col. 2 line 5, 40-48, 64-68, col. 4 line 55-62, and col. 5 lines 25-45. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the sample observation being used with an transmission electron beam in order to aid in the determination of the being shift resulting from the beam being turned off and on.

As per claim 2, Mann [5,706,416] teaches specifying an object in the image wherein multiple images formed by polar coordinate conversion (coordinate transformation, which the examiner views as equivalent to being formed by polar coordinate conversion) of the images of multiple objects being stored as reference images, carrying out polar coordinate conversion (coordinate transformation, which the examiner views as equivalent to being formed by polar coordinate conversion) of the image of the specified object, computing the correlation of the images between the specified object image having been subject to polar coordinate conversion and the reference image, and displaying the result of computation. See Mann [5,706,416] abstract, figs. 1-2, col. 1 lines 5-15, 50-60, col. 2 lines 5-10, 20-32, columns 3-4, col. 7 lines 1-20, col. 8 lines 5-20, 44-50, col. 10 lines 10-20, and columns 13-14.

As per claim 3, Mann [5,706,416] teaches the image of the object consisting of multiple pairs of images of the objects having a different tilt angle with respect to the optical axis. See Mann [5,706,416] abstract, figs. 1-2, col. 1 lines 5-15, 50-60, col. 2 lines 5-10, 20-32, columns 3-4, col. 7 lines 1-20, col. 8 lines 5-20, 44-50, col. 10 lines 10-20, and columns 13-14.

As per claim 5, Mann [5,706,416] the result of computation being displayed in terms of agreement between the object image and the reference image. See Mann [5,706,416] abstract, figs. 1-2, col. 1 lines 5-15, 50-60, col. 2 lines 5-10, 20-32, columns 3-4, col. 7 lines 1-20, col. 8 lines 5-20, 44-50, col. 10 lines 10-20, and columns 13-14.

As per claim 6, Mann [5,706,416] teaches selecting multiple objects in the images of a sample, carrying out polar coordinate conversion (coordinate transformation, which the examiner views as equivalent to being formed by polar coordinate conversion) of each of the selected multiple object images, specifying one of the multiple objects, and computing the correlation between the image of the specified object subsequent to polar coordinate conversion (coordinate transformation, which the examiner views as equivalent to being formed by polar coordinate conversion) and the images of other objects subsequent polar coordinate conversion, and displaying the result of computation. See Mann [5,706,416] abstract, figs. 1-2, col. 1 lines 5-15, 50-60, col. 2 lines 5-10, 20-32, columns 3-4, col. 7 lines 1-20, col. 8 lines 5-20, 44-50, col. 10 lines 10-20, and columns 13-14.

As per claim 7, Mann [5,706,416] teaches the apparatus data at the time of photographing the image of the sample, being stored in a one-to-one relationship (database library col. 13 line 40 - col. 14 line 67).

As per claims 8-9, Mann [5,706,416] teaches the image of the sample being stored, and containing a tag area, and the apparatus data being stored in the tag area. See Mann [5,706,416] abstract, figs. 1-2, col. 1 lines 5-15, 50-60, col. 2 lines 5-10, 20-32, columns 3-4, col. 7 lines 1-20, col. 8 lines 5-20, 44-50, col. 10 lines 10-20, and columns 13-14. However, it does not explicitly state the format in which the sample is stored. It would have been obvious to one of ordinary skill in the art the time the invention was made to have the format be a TIFF format, since it has been held to be within the general skill of a worker in the art to select a known computer processing format on the basis of its suitability for the intended use as a matter of obvious design choice.

As per claim 10, Van der Mast [4,618,766] teaches a transmission electron microscope comprising an electron gun (2), an irradiation lens (4,6) for applying to a sample (10) the electron beam discharged from the electron gun, and a controller (26) for storing the electron beam image having passed through the sample (10), the transmission electron microscope further characterized in the controller. See Van der Mast [4,618,766] abstract, fig. 1, col. 1 lines 5-10, 18-23, 50 – col. 2 line 5, 40-48, 64-68, col. 4 line 55-62, and col. 5 lines 25-45. However, Van der Mast [4,618,766] does not explicitly state that the controller store a set of multiple transmission electron microscope images having different angles of the electron beam as reference in

advance. It would have been obvious to one ordinary skill in the art at the time the invention was made to have the controller store a set of multiple transmission electron microscope images having different angles of the electron beam as reference in advance in order to aid one in determining the beam displacement after the beam has been turned off and on so as to prevent irradiating the sample at the wrong location. Van der Mast [4,618,766] also teaches the electron beam being applied to the sample to form a set of multiple transmission electron microscope images having different irradiation angles, thereby computing correlation between the set of the multiple transmission electron microscope images and the reference image.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent Nos. 6,570,156 to Tsuneta et al, 5,983,251 to Martens et al, and U.S. Published Patent Application 2003/0039386 to Ishitani et are considered pertinent to the applicants' disclosure. Tsuneta [6,570,156] is considered pertinent due to its discussion on an auto-adjusting electron microscope. Martens [5,983,251] is considered pertinent due to its discussion on a method and apparatus for data analysis. Ishitani [2003/0039386] is considered pertinent due to its discussion on an image evaluation method and microscope.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Quash whose telephone number is (571)-272-2480. The examiner can normally be reached on Monday thru Friday 9 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (571)-272-2477. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A. Quash

9/30/04

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